

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1. (Currently Amended) A power-folding vehicle mirror assembly comprising:

- a base mountable to a vehicle;
- a clutch body mounted to and rotationally fixed to the base;
- a sun gear slidably mounted to the base for rotation about a first axis, the sun gear biased towards engagement with the clutch body ~~by a biasing means;~~
a clutch body receiving portion mounted between said sun gear and said clutch body, said clutch body receiving portion receiving a portion of said clutch body;
- a mirror head assembly rotatably mounted to the base;
- a planetary gear mounted to the mirror head assembly for rotation about a second axis, the planetary gear meshing with the sun gear; and
- a motor operably connected to the planetary gear for driving the mirror head assembly around the sun gear,

wherein, upon the application of a manual breakaway force to the mirror head assembly, the planetary gear transmits a breakaway torque to the sun gear, the breakaway torque sliding the sun gear away from said clutch body receiving portion and out of engagement with the clutch body, thereby allowing rotation of the sun gear and mirror head assembly with respect to the base while maintaining mesh with the planetary gear.

Claim 2. (Currently Amended) An assembly as claimed in claim 1, further comprising a ~~wherein the~~ biasing means in the form of ~~comprises~~ a spring.

Claim 3. (Original) An assembly as claimed in claim 2 further comprising ramped detents on the clutch body bearing against corresponding detents on the sun gear,

whereby the ramped detents enable an axial force to be generated as the detents are rotationally forced against each other, the axial force working against the spring to enable the sun gear to disengage from the clutch body thereby allowing relative rotation.

Claim 4. (Original) An assembly as claimed in claim 3 wherein the planetary gear is a worm gear.

Claim 5. (Original) An assembly as claimed in claim 4 wherein the spring comprises a disc spring.

Claim 6. (Original) An assembly as claimed in claim 5 wherein the spring has a negative spring rate.

Claim 7. (Original) An assembly as claimed in claim 6 wherein the first and second axes are orthogonal, the sun gear is helically formed at a first helix angle and the worm gear is helically formed at a second helix angle complimentary to the first helix angle.

Claim 8. (Original) An assembly as claimed in claim 7 wherein the ramped detents are ramped so that the breakaway torque is substantially the same in either breakaway direction.

Claim 9. (Original) An assembly as claimed in claim 8 wherein the mirror head assembly comprises:

an arm having a proximal end rotatably mounted to the base and a distal end remote from the base;

a head mounted to the distal end of the arm; and

a mirror mounted to the head.

Claim 10. (Original) An assembly as claimed in claim 9 wherein the planetary gear and motor are housed within the arm.

Claim 11. (Currently Amended) A clutch and reduction drive assembly comprising:

a first gear mounted to a first body for rotation about a first axis;

a second gear meshing with the first gear, the second gear mounted to a second body for rotation about a second axis; and

a clutch mechanism having a clutch body and a clutch body receiving portion, the receiving portion mounted between ~~to or integral with~~ the second gear and the clutch body, the clutch mechanism preventing relative rotation between the clutch body and the second gear in an engaged position and allowing relative rotation between the clutch body and the second gear in a disengaged position,

wherein the clutch mechanism is disengagable by movement of the second gear together with the receiving portion with respect to both the clutch body and the first gear while the second gear remains meshing with the first gear, the movement in a direction along the second axis of rotation.

Claim 12. (Original) An assembly as claimed in claim 11 wherein the clutch mechanism is loaded by a spring.

Claim 13. (Original) An assembly as claimed in claim 12 wherein the clutch mechanism further comprises ramped detents on the clutch body bearing against corresponding detents on receiving portion,

whereby the ramped detents enable an axial force to be generated as the detents are rotationally forced against each other, the axial force overcoming the load on the clutch mechanism provided by the spring thereby enabling the clutch mechanism to disengage.

Claim 14. (Original) An assembly as claimed in claim 13 wherein the first gear is a worm gear.

Claim 15. (Original) An assembly as claimed in claim 14 wherein the worm gear is driven by a motor.

Claim 16. (Original) An assembly as claimed in claim 15 wherein the motor drives the worm gear through a reduction gear drive.

Claim 17. (Original) An assembly as claimed in claim 16 wherein the reduction gear drive includes a further worm gear.

Claim 18. (Original) An assembly as claimed in claim 17 wherein the spring comprises a disc spring.

Claim 19. (Original) An assembly as claimed in claim 18 wherein the spring has a negative spring rate.

Claim 20. (Currently Amended) A clutch and reduction drive assembly comprising:

- a primary frame;

- a clutch body mounted to and rotationally fixed to the primary frame;

- a primary gear slidably and rotatably mounted to the primary frame for rotation about a first axis, the primary gear biased towards engagement with the clutch body by ~~a biasing means~~;

- a clutch body receiving portion mounted between said sun gear and said clutch body, said clutch body receiving portion receiving a portion of said clutch body;

- a secondary frame rotatably mounted to ~~[[the]]~~ a base; and

- a secondary gear mounted to the secondary frame for rotation about a second axis, the secondary gear meshing with the primary gear,

- wherein the primary gear is movable ~~against the biasing means~~ from an engaged position in which rotation with respect to the clutch body is prevented, to a disengaged position in which said clutch body is removed from said clutch body receiving portion, and rotation with respect to the clutch body occurs.

Claim 21. (Currently Amended) An assembly as claimed in claim 20, further comprising a wherein the biasing means in the form of comprises a spring.

Claim 22. (Original) An assembly as claimed in claim 21 further comprising ramped detents on the clutch body bearing against corresponding detents on the primary gear,

whereby the ramped detents enable an axial force to be generated as the detents are rotationally forced against each other, the axial force working against the spring to enable the primary gear to disengage from the clutch body thereby allowing relative rotation.

Claim 23. (Original) An assembly as claimed in claim 22 wherein the secondary gear is a worm gear.

Claim 24. (Original) An assembly as claimed in claim 23 wherein the spring comprises a disc spring.

Claim 25. (Original) An assembly as claimed in claim 24 wherein the spring has a negative spring rate.

Claim 26. (Original) An assembly as claimed in claim 25 wherein the first and second axes are orthogonal, the primary gear is helically formed at a first helix angle and the worm gear is helically formed at a second helix angle complimentary to the first helix angle.

Claim 27. (Cancelled)